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L Number	Hits	Search Text	DB	Time stamp
1	1154	(701/213-217).CCLS.	USPAT	2002/07/05 14:41
2	38	((701/213-217).CCLS.) AND (toll or tolls)	USPAT	2002/07/05 14:46
3	540	GPS AND (toll or tolls)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/07/05 14:46
4	152	GPS SAMe (toll or tolls)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/07/05 16:28
5	0	saburou-i$.in.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/07/05 16:29
6	37	toll adj payment.ti.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/07/05 16:30
7	5	"5933114"	USPAT	2002/07/05 16:30
8	1	("5933114").PN.	USPAT	2002/07/05 16:32
9	17550	mannesmann	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/07/05 16:32
10	17022	mannesmann$.as.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/07/05 16:32
11	28	mannesmann$.as. and (toll or tolls)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/07/05 16:32
12	6	(mannesmann$.as. and (toll or tolls)) and GPS	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2002/07/05 16:33

SMD

US-PAT-NO: 5310999

DOCUMENT-IDENTIFIER: US 5310999 A

TITLE: Secure toll collection system for moving vehicles

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Detailed Description Text - DETX (2):

Briefly, the present invention resides in a system that allows vehicles to pass through specially designed toll **booths** at relatively high speeds-at least as high as safety considerations allow. As motorists approach the toll **booth,** they insert a smart card into a transponder unit which reads identification information stored on the card and transmits it, via radio frequency, to a roadside reader (RSR) which comprises a pair of spaced-apart antennas and a computer (Plaza Server) which serves the toll **booth** in matters of electronic toll payment. In response, the RSR either debits the card or **charges the toll** to the motorist's account. The details of this transaction are then transmitted from the roadside controller back to the transponder, and a record is written into the smart card. This system is implemented in such a way that it operates with fixed or variable payment toll **booths**. Further, techniques are disclosed that prevent fraud while providing maximum convenience to both the motorist and the highway authority. These benefits will become apparent as the details of implementation are revealed.

US-PAT-NO: 6087963

DOCUMENT-IDENTIFIER: US 6087963 A

TITLE: Vehicle-mounted device for automatic charge receipt system

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Brief Summary Text - BSTX (3):

This invention relates to an automatic charge receipt system for automatically collecting a utilization (i.e., **toll) charge** pertaining to vehicle/use information and utilization charge information as communicated between a vehicle running on a utilization **charge road (i.e., toll** road) and a road-side device (toll **booth**) installed in a road-side system, and to a vehicle-mounted device to be installed on the vehicle for effecting such communication.

Brief Summary Text - BSTX (6):

As a practical settlement met hod, it has been proposed that information on a current expendable balance (e.g., an electronic cash balance on account) is written in advance in the vehicle-mounted device in place of cash, for example, via pre-paid toll cards. A request for information on a utilizing charge is sent from the road-side device to the vehicle-mounted device as a charge is incurred (e.g., as the vehicle passes the **toll booth), and then a utilization charge** is subtracted within the vehicle-mounted device from the current expendable balance.

US-PAT-NO: 5670959

DOCUMENT-IDENTIFIER: US 5670959 A

TITLE: Antenna reflector

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Detailed Description Text - DETX (4):

It must be noted here that in a preferred embodiment, the antenna reflector of the present invention is mounted on an automobile and is formed as a responder of a commonly-known **toll charge** system wherein such transponder receives 60 GHz milliwaves sent by **ground**-based stations installed in the entrance and departure gates when the vehicle enters or leaves toll roads or toll parking lots, and sends response waves that include its own identification code to enable **toll charging of toll charges** and parking fees in the **ground**-based station side.

Detailed Description Text - DETX (22):

In addition, by turning the voltage application switch SW on and off in correspondence with the identification code during the approach of the vehicle to the **ground**-based station, a modulated reflection radio wave Sin can be sent to the **ground**-based station. For this purpose, the **ground**-based station side can derive information on the owner of the vehicle that is approaching and on **toll charges and thus, toll charge** operations are done promptly and accurately.

US-PAT-NO: 5359528

DOCUMENT-IDENTIFIER: US 5359528 A

TITLE: System for accurately determining the mileage traveled by a vehicle within a state without human intervention

---------- KWIC ---------

map matching

Brief Summary Text - BSTX (4):
Presently, commercial truck fleet operators frequently overpay road use **taxes** because there is no viable method of accurately recording the miles traveled by a truck in each state.

Brief Summary Text - BSTX (5):
In today's trucking industry, trucks traveling in more than one state are required to have their road use **tax** apportioned among the states in which they travel. Typically, truck drivers maintain log books which show the time and routes they drive. These documents can be altered or falsified by the driver with little chance of detection.

Brief Summary Text - BSTX (6):
Consequently, the state taxing authorities often refuse to accept the drivers log books as being accurate, and assess a road use **tax** based upon their inflated estimate of the number of miles driven within their state. This occurs more frequently in states that have a higher road use **tax** than nearby states.

Brief Summary Text - BSTX (10):
Consequently, there exists a need for improving the information that state taxing authorities use to determine road use **taxes,** which overcome the problems of the log books and overcome the problems of the proposed transponder type system.

Claims Text - CLTX (17):
repeating the above steps when the **vehicle is in the same state and recording the vehicle present location,** odometer mileage, time, and date in a nonvolitale memory when the vehicle is in a different state; and,

US-PAT-NO: 6359554

DOCUMENT-IDENTIFIER: US 6359554 B1

TITLE: Motor vehicle dashboard indicators with an intelligent computer network interface

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Detailed Description Text - DETX (4):
Governmental regulations require that the driver keep a log of driving activity and fuel **tax** calculations. This information is stored and tabulated within a driver log computer 20, as will be described.

Detailed Description Text - DETX (22):
FIG. 6 illustrates the front panel 61 for a navigation turn-by-turn indicator unit 60 that receives signals from the GPS navigation system 22. Such navigation systems 22 are common in many types of motor vehicles and utilize signals from satellites of the Global Positioning System to derive the precise location of the vehicle. That location then is employed by the navigation system 22 to determine the route for the vehicle to travel to a destination that has been selected by the driver. Conventional navigation systems utilize a two dimensional image display to present a map indicating the **route that the vehicle is to follow**. However, this display requires that the driver turn away from viewing the road and study the map to learn the indicated route. A driver's prolonged diversion of attention away from the road is potentially hazardous.

Detailed Description Text - DETX (23):
The turn-by-turn indicator unit 60 provides a simplified display that instructs the driver how to operate the **vehicle in order to follow the route** designated by the navigation system. The indicator 60 incorporates left and right turn arrows 62 and 63, as well as a straight ahead indicator arrow 64. A reverse arrow 66 is provided to indicate when the vehicle has driven past an intersection at which a turn should have been executed.

Detailed Description Text - DETX (25):
Long-haul trucks pay highway use **taxes** to each state of the United States based on the number of miles driven in each jurisdiction. Therefore, the driver is required to maintain accurate records of the truck's travel. This conventionally has been done by manually recording the mileage reading from the

truck's odometer in a written log each time the truck crosses a state boundary and employing those mileage readings to calculate the number of miles driven in each state. During a given reporting the period the miles from each trip then must be totaled by state to determine the amounts of highway use **taxes** that are due.

Detailed Description Text - DETX (26):

FIG. 7 shows an embodiment 70 of an indicator/selector unit 28 which is utilized by the driver to input information into the driver log computer 20 for calculating highway use **taxes**. Alternatively, the highway use **tax** function can be provided entirely by the indicator/selector unit. This particular indicator/selector unit 70 has a front panel 71 with a two character alphanumeric display 72 that shows a two letter abbreviation for each state and the District of Columbia. For example, the illustrated unit is displaying the letters WI for the state of Wisconsin. For trucks driven internationally, the indicator/selector unit 70 can be programmed to record mileage driven in different countries.

Detailed Description Text - DETX (27):

The front panel 71 also has a first pushbutton switch 74 which is designated by the legend "SCROLL". This switch is activated by the operator to signal the microcomputer 42 to change the state designation, shown in display 72. Repeatedly pressing the first pushbutton switch 74 causes the display to scroll through a list of all of the highway use taxing jurisdictions. By pressing a second pushbutton switch 76 the driver indicates to the microcomputer 42 that the presently displayed state designation is to be selected. Although one could scroll through all the governmental territories in the United States which levy highway **taxes,** such would be rather cumbersome. Therefore, the microcomputer 42 is programmed with a data table that designates the other states which border the state that was previously selected. Thus, if the currently selected state is Wisconsin, pressing the first pushbutton switch 74 causes the abbreviations for Minnesota, Michigan, Iowa, and Illinois to be displayed sequentially. This greatly facilitates data entry when traveling across a state border. Thus, if the truck crosses the boundary from Wisconsin into Minnesota, the driver presses the first pushbutton switch 74 (SCROLL) until the letters MN for Minnesota appear and then the second pushbutton switch 76 is pressed to select the displayed state. This provides a signal to the microcomputer 42 that the truck has exited Wisconsin and entered Minnesota.

Detailed Description Text - DETX (29):

When the entire highway **tax** logging function is incorporated into microcomputer 42, the indicator/selector unit 70 responds to crossing a state border by listening on the communication network 10 for a message containing the truck odometer reading. Such messages emanate from either the transmission controller 14 to which the speedometer sensor is connected or from the

dashboard computer 18 depending upon which devices calculates miles driven. The odometer reading is recorded in the indicator/selector microcomputer 42 as the entry mileage for the state of Minnesota and that mileage utilized along with the previous entry mileage for the state of Wisconsin to calculate the amount of miles driven in Wisconsin. That amount of miles then is added to the cumulative miles driven in Wisconsin contained in storage location in the memory of microcomputer 42. That memory has similar storage locations for all the highway taxing jurisdictions in the United States. The time and date of the border crossing also may be stored in the memory.

Detailed Description Text - DETX (30):

Governmental regulations specify the maximum amount of time that the driver is able to continuously operate the truck and the amount of time that the driver must rest between periods of operation. Such regulations required drivers to keep a log of their operating and rest periods in order to verify compliance with the regulations. This process can be automated by another indicator/selector unit 28 that is similar to the highway **tax** unit 70. In this other application, the display presents designations of different driver and the vehicle activities, for example driving, resting, and vehicle idling. Vehicle idling, which occurs during engine warmup, loading and unloading, must be logged in order to reconcile the driving hours with the total hours of engine operation.

Detailed Description Text - DETX (31):

The various activity classes are sequentially displayed by use of a SCROLL pushbutton switch and then chosen by operating a SELECT pushbutton switch as was done with the highway **tax** indicator/selector unit 70. This selection either is sent to a driver log computer 20 or this logging functionality can be programmed into microcomputer 42 of this indicator/selector unit. Upon each selection of a different entry into the driver log, the date and time of day also is recorded. This latter information is provided by a real-time clock in the truck which broadcasts that data over the communication network 10.

US-PAT-NO: 5917434

DOCUMENT-IDENTIFIER: US 5917434 A

TITLE: Integrated taximeter/GPS position tracking system

---------- KWIC ---------

Abstract Text - ABTX (1):

A taximeter system includes a taximeter or trip meter for a truck integrated with an integral GPS receive/computer for providing GPS position and time information. The odometer input pulses to the taximeter are accurately calibrated by using GPS position, velocity, and time information to generate corrected odometer pulses which are provided to the odometer input terminal of the taximeter. The GPS system is integrated into the taximeter for calibrating and cross checking of input odometer pulses to provide reliable, consistent distance measurements by the taximeter. The integrated taximeter and GPS system provided according to the invention uses GPS position, velocity, and time information to produce incontrovertibly accurate corrected, odometer input pulses and GPS time signals for the taximeter to precisely compute elapsed time and distance traveled. Dead reckoning operation of the system is available when the GPS receiver has service outages. A calibrated mileage meter for trucks also includes an integral GPS receive/computer for providing accurately calibrated odometer pulses to the mileage meter. Certain locations can be tagged and a printer and recorder are recorded for documentation of trip information such as when a vehicle enters or leaves a state, proof of a **path followed by a vehicle,** delivery of good at a certain site, operation within speed limits, certification of operation within a certain geographic area.

Brief Summary Text - BSTX (4):

Mileage meters for commercial vehicles such as taxicabs and long-haul trucks are calibrated and certified by governmental agencies for a specific tire pressure and a certain rim size. When the tire pressure and rim size of a vehicle are changed, distance errors of 3 percent can be obtained. For consumers, increased mileage readings by a taximeter increase their costs. For a state governmental agency which **taxes** a long-haul truck based on the number of miles driven by the long-haul truck within the state, shortened mileage readings result in significant revenue shortfall for the state.

Brief Summary Text - BSTX (7):

A taximeter or mileage meter is used to provide distance measurements. U.S. Pat. No. 5,014,206 granted to Scribner et al. on May 7, 1991, and entitled

"Tracking System" discloses a system used for determining and **recording the geographic location of a vehicle** during predetermined events using a GPS system. The Scribner et al. system is adapted to a particular application by configuring a switch or sensor to record the occurrence of a desired event, such as the opening of a garbage truck tailgate at a waste dump site. Passive RF tags are used to identify a vehicle as being at a particular site at a particular time.

Brief Summary Text - BSTX (12):

A taximeter system according to the invention includes a taximeter integrated with an integral GPS receive/computer for providing GPS position, velocity, and time information. The odometer input pulses to the taximeter are accurately calibrated by using GPS position, velocity, and time information to generate corrected odometer pulses which are provided to the odometer input terminal of the taximeter. The GPS system is integrated into the taximeter for calibrating and cross checking of input odometer pulses to provide reliable, consistent distance measurements by the taximeter. The integrated taximeter and GPS system provided according to the invention uses GPS position, velocity, and time information to produce incontrovertibly accurate corrected, odometer input pulses and GPS time signals for the taximeter to precisely compute elapsed time and distance traveled. Dead reckoning operation of the system is available when the GPS receiver has service outages. A calibrated mileage meter for trucks also includes an integral GPS receive/computer for providing accurately calibrated odometer pulses to the mileage meter. Certain **locations can be tagged and recorded for documentation of trip information such as when a vehicle** enters or leaves a state, proof of a **path followed by a vehicle,** delivery of good at a certain site, operation within speed limits, certification of operation within a certain geographic area.

Brief Summary Text - BSTX (16):

Means are included for providing trip information and for recording trip information. The trip information includes various types of information, such as, for example, information: about when a vehicle enters and leaves predetermined zones, establishing proof of a **path followed by a vehicle,** about delivery of goods by a vehicle at a certain site, about operation of a vehicle within speed limits, and about certification of operation of a vehicle within a certain geographic area.

Brief Summary Text - BSTX (17):

A method of calibrating a taximeter installed in a taxi vehicle is provided according to the invention. The method includes the steps of providing GPS position, velocity, and time information as output signals from a GPS receiver/computer system, receiving input odometer pulses from an odometer, providing calibrated odometer output pulses as a function of the received GPS position, velocity, and time information and computing a fare in a taximeter

from the calibrated odometer output pulses provided by said GPS receiver/computer system. The method also includes the step of using a dead reckoning navigation system for providing location information to the GPS computer system during GPS receiver system service outages. In one embodiment, differential GPS means are used for improving the accuracy of the GPS receiver/system. The method includes the steps of providing trip information and of displaying trip information. The step of providing trip information includes providing information about several items, including proof of a **path followed by a taxi vehicle,** operation of a vehicle within speed limits, and certification of operation within a certain geographic area.

Brief Summary Text - BSTX (18):

The invention includes a method of calibrating odometer pulses received by a mileage meter for a vehicle such a local delivery truck or a long haul truck. The steps of this method include receiving raw odometer pulses from an odometer, providing GPS position, velocity, and time information from a GPS receiver/computer system, receiving the GPS position, velocity, and time information from the GPS receiver/computer system, providing calibrated odometer output pulses as a function of the received GPS position, velocity, and time information, and computing mileage from the calibrated odometer pulses. The method also includes the steps of providing trip information and recording such trip information. The step of providing trip information includes the step of providing information about when a vehicle enters and leaves a predetermined zone, about proof of a **path followed by a vehicle,** about delivery of goods at a certain site, about operation within speed limits, and about certification of operation within a certain geographic area. Differential GPS is used to improve the accuracy of the GPS receiver/system.

Detailed Description Text - DETX (22):

The recorded trip information can include a number of items, depending upon the application. For an interstate truck, the information is about when and where a vehicle enters and leaves a predetermined zone, such as a state or municipality. For both taxis and trucks, the trip information includes information showing proof of a **path followed by a vehicle**. The trip information may include information about delivery of a passenger or goods at a certain site. The trip information can include information about operation of a vehicle, particularly a truck, within safe speed limits. The trip information can also include information about certification of operation within a certain geographic area.

Detailed Description Text - DETX (31):

The integrated taximeter and GPS system provided according to the invention uses GPS position, velocity, and time information to produce incontrovertibly accurate corrected tachometer input pulses and GPS time signals for the taximeter to precisely compute elapsed time and distance traveled. As

mentioned in connection with the description of FIG. 3, the recorded trip information can include a number of items, depending upon the application. For an interstate truck, the information is about when and where a vehicle enters and leaves a predetermined zone, such as a state or municipality. For both taxis and trucks, the trip information includes information showing proof of a **path followed by a vehicle**. The trip information may includes information about delivery of a passenger or goods at a certain site. The trip information can include information about operation of a vehicle, particularly a truck, within safe speed limits. The trip information can also include information about certification of operation within a certain geographic area.

Detailed Description Text - DETX (38):

With reference next to FIG. 6, yet another embodiment of the present invention is shown including a key-activated recording system. As shown in FIG. 6, the present embodiment includes additional features such as a real-time clock 350, a battery 352, and a key-based on/off switch 354. The present embodiment is well suited for logging the miles traveled by a vehicle through, for example a given state. Thus, the present invention is extremely useful for determining state **taxes** assessed according to the quantity of miles traveled by a vehicle through a given state. In operation, once a vehicle enters a given state or geographic region, key-activated on/off switch 354 is turned on. When the vehicle leaves the state or geographic region, key-activated on/off switch 354 is turned off. The state or geographic region is then able to receive an accurate incontrovertible record of the miles traveled by the vehicle while in the state or geographic region. Real-time clock 350 powered by battery 352 provides a time-stamp which indicates when key-activated switch 354 is turned on and/or off. Therefore, the present embodiment provides a record of the times at which key-activated switch is turned on and/or off. By providing such a record, the present embodiment prevents the intentional or unintentional turning off of key-activated switch while the vehicle travels through the state or geographic region. Thus, the state or geographic region is able to accurately assess **taxes** upon vehicles moving through the state or geographic region.

Detailed Description Text - DETX (39):

Furthermore, the present embodiment is also well suited to having key-activated switch 354 turned on or of by, for example, a state official posted at the border of the state. By having key-activated switch 354 turned on or of by a state official the state is able to precisely monitor and **tax** vehicles moving therethrough.

Detailed Description Text - DETX (41):

FIG. 7 is a block diagram of a mileage measurement and logging system 400 which uses a GPS system having a direct output terminal at which are provided corrected odometer pulses. The mileage measurement and logging system 400 is

used, for example, with vehicles such as trucks, which have mileage meters which are calibrated and certified by governmental agencies for a specific tire pressure and a certain rim size. When the tire pressure and rim size of a vehicle are changed, distance errors of 3 percent can be obtained. For a state governmental agency which **taxes** a long-haul truck based on the number of miles driven by the long-haul truck within the state, shortened mileage readings result in significant revenue shortfall for the state.

Detailed Description Text - DETX (44):

Information is sent on a signal line 412 from the fare computation module 330 to the GPS receiver/computer module 402. Information relevant to particular trips is sent from the GPS receiver/computer on a signal line 414 to a data recorder 416. This information includes trip information such as when a vehicle enters or leaves a state, proof of a **path followed by a vehicle,** delivery of good at a certain site, operation within speed limits, certification of operation within a certain geographic area.

Detailed Description Text - DETX (45):

The integrated taximeter and GPS system provided according to the invention uses GPS position, velocity, and time information to produce incontrovertibly accurate corrected odometer input pulses and GPS time signals for the taximeter to precisely compute elapsed time and distance traveled. Also, as mentioned in connection with the description of FIG. 3, the recorded trip information can include a number of items, depending upon the application. For an interstate truck, the information is about when and where a vehicle enters and leaves a predetermined zone, such as a state or municipality. For both taxis and trucks, the trip information includes information showing proof of a **path followed by a vehicle**. The trip information may include information about delivery of a passenger or goods at a certain site. The trip information can include information about operation of a vehicle, particularly a truck, within safe speed limits. The trip information can also include information about certification of operation within a certain geographic area.

Claims Text - CLTX (20):

wherein the step of providing the trip information includes information selected from the group consisting of the step of providing information about proof of a **path followed by a taxi vehicle,** providing information about operation of a vehicle within speed limits; and providing information about certification of operation within a certain geographic area.

US-PAT-NO: 5815093

DOCUMENT-IDENTIFIER: US 5815093 A

TITLE: Computerized vehicle log

---------- KWIC ---------

Brief Summary Text - BSTX (5):

Owner's of vehicles used for business purposes keep extensive records on their operation for both legal and practical reasons. Records for income-**tax** deductible business travel activity are important for individuals using their personal automobiles for business on a part-time basis. Trucking and railroad companies must maintain vehicle records for government **tax** reporting and safety requirements, as well as for planning for routine maintenance or repair.

Detailed Description Text - DETX (13):

Vehicle data section 31 also provides routine **vehicle operation and location data that are recorded** in data memory 30 for use by individuals using their private vehicle for business, and vehicle fleet managers, such as in trucking, taxicab, water carriers, railroad companies, and auto rental companies. Vehicle data section 31 comprises speedometer and odometer data 33, engine revolutions per minute (RPM) data 47, fuel flow data 43, location data 45 and global positioning system (GPS) receiver 53, in addition to the useful accident data discussed above. In the case of non-accident data, the recording is continuous rather than limited to a twenty second prior window.

Detailed Description Text - DETX (18):

Location data 45 is useful to a businessman using a private auto to record business trip expenses. A vehicle computerized log according to the present invention automatically calculates and records in data memory 30, distances traveled to and from GPS-derived locations for **tax** or other business management uses. Location data 45 is also useful for owner's of auto, truck, railroad rolling stock, and waterborne shipping **vehicles in tracking the location** of shipping-in-progress. Customers, such as producers of industrial products, routinely interrogate shipping managers of the location of their inbound and outbound shipments. With accurate and timely shipment-in-progress locations they can affirm, or be prepared to adjust, their production and product delivery schedules.

US-PAT-NO: 5550743

DOCUMENT-IDENTIFIER: US 5550743 A

TITLE: Geographic locator of a vehicle using GPS and angles between pairs of adjacent boundary coordinate points

---------- KWIC ---------

Brief Summary Text - BSTX (3):

With the advent of vehicle fleet management and monitoring systems, elaborate computerized communication systems directed at automatically obtaining and **recording vehicle location** and a wide variety of other information as a vehicle covers its route, numerous on-board computer systems have evolved. The information collected by these systems can be used for a myriad of purposes which encompass automated customer billing systems, computerized dispatching, trip reporting and other such tasks. One type of information available from an on-board vehicle computer is the present location of the vehicle in terms of its geographic latitude and longitude coordinates. One particularly prevalent way of obtaining this data is through a global positioning system (GPS) receiver which obtains this positional data from signals transmitted by satellite.

Brief Summary Text - BSTX (4):

However, oftentimes it is necessary to convert the raw coordinate data into a more useful form which provides additional information such as what state, city, province, county or other defined geographical territory the vehicle is in. This information is particularly useful in various fleet and trucking applications such as in performing automated road use **tax** calculations as well as various trip reporting functions. However, even when coordinate data for the boundary lines of various geographic entities has been pre-stored in memory, the process of individually comparing the current location coordinates to boundary coordinate data for each entity, in order to determine whether the current point lies within that boundary, can become quite computer intensive.

US-PAT-NO: 5544225

DOCUMENT-IDENTIFIER: US 5544225 A

TITLE: Data messaging in a cellular communications network

---------- KWIC ---------

Detailed Description Text - DETX (107):

In operation of central host 226 of FIG. 12, data and messages received from remote units may be displayed on display 372 and output, for example in hard copy form, through user input/output 374. For example, a map with location identification of each remote unit associated with the central host is displayed on display 372. In this way, the central host 226 can keep **track of the location and progress of remote units and for example, vehicles** associated with the mobile units. The processor 366 runs software which allows automated sending of data to particular remote units. This data can be automatically generated by processor 366 or input through user input/output 374. Central host can also receive raw location information, that can then be processed in processor 366 to generate latitude and longitude coordinates.

Detailed Description Text - DETX (108):

Processor 366 may also, by tracking the locations of mobile units, based on longitude and latitude and road map information, determine how many miles each mobile unit travels within a particular state. From this information, fleet mileage reports can be generated, for example for trucking companies. These fleet mileage reports can be used to determine the distance traveled and amount of fuel used in various states, which allows for accurate reporting for both fuel and road usage **taxes**. Furthermore, knowledge of the location of vehicles at particular times, for example from "present" messages or geographic location data, allows for calculation of estimated times of arrivals by dispatchers at central hosts. For example, knowledge that a truck is in Dallas, Tex. on Thursday night allows for an estimate of arrival time in Mobile, Ala.

US-PAT-NO: 5539810

DOCUMENT-IDENTIFIER: US 5539810 A

TITLE: Data messaging in a communications network

---------- KWIC ---------

Detailed Description Text - DETX (107):

In operation of central host 226 of FIG. 12, data and messages received from remote units may be displayed on display 372 and output, for example in hard copy form, through user input/output 374. For example, a map with location identification of each remote unit associated with the central host is displayed on display 372. In this way, the central host 226 can keep **track of the location and progress of remote units and for example, vehicles** associated with the mobile units. The processor 366 runs software which allows automated sending of data to particular remote units. This data can be automatically generated by processor 366 or input through user input/output 374. Central host can also receive raw location information, that can then be processed in processor 366 to generate latitude and longitude coordinates.

Detailed Description Text - DETX (108):

Processor 366 may also, by tracking the locations of mobile units, based on longitude and latitude and road map information, determine how many miles each mobile unit travels within a particular state. From this information, fleet mileage reports can be generated, for example for trucking companies. These fleet mileage reports can be used to determine the distance traveled and amount of fuel used in various states, which allows for accurate reporting for both fuel and road usage **taxes**. Furthermore, knowledge of the location of vehicles at particular times, for example from "present" messages or geographic location data, allows for calculation of estimated times of arrivals by dispatchers at central hosts. For example, knowledge that a truck is in Dallas, Tex. on Thursday night allows for an estimate of arrival time in Mobile, Ala.